CURRICULUM VITAE

Name: Matthew Philip Hoffman

Place of Birth: Te Puia, New Zealand

Citizenship: New Zealand

Education:

1986	B.D.S., University of Otago School of Dentistry Dunedin, New Zealand, Awarded with Credit
1991	M.S., Microbiology and Immunology, University of Rochester School of Medicine and Dentistry, Rochester, NY
1994	Ph.D., Microbiology and Immunology, University of Rochester School of Medicine and Dentistry, Rochester, NY

Brief Chronology of Employment:

1987	Dental House Surgeon (1st Year) Wellington Hospital Board, Wellington, NZ
1988	Dental House Surgeon (2nd Year) Wellington Hospital Board, Wellington, NZ
1989	Research Assistant, Dental Research Unit, NZ Medical Research Council, Wellington, NZ
1994-1997	Visiting Fellow, Cell Biology Section, Laboratory of Developmental Biology, NIDR, NIH
1997-2000	Visiting Associate, Cell Biology Section, Craniofacial Developmental Biology and Regeneration Branch, NIDCR, NIH
2000-2003	Staff Scientist, Cell Biology Section, Craniofacial Developmental Biology and Regeneration Branch, NIDCR, NIH
2004	Principal Investigator, Matrix and Morphogenesis Unit, CDBRB, NIDCR, NIH

Honors and Awards:

2002	NIDCR, NIH Cash Award for Excellence in Mentoring ($3000)
2002	NIDCR Travel Award ($500)
1999	NIDCR, NIH Royalty Cash Award for Research Initiative ($2500)
1998	NIDCR, NIH Cash Award for Research Excellence ($3000)
1996-1997	NASA award to fund the project "Salivary gland cell differentiation in the RWV Bioreactor." $64,000/year for 2 years
1996	NIDR, NIH Cash Award for Research Excellence ($2500)
1996	Poster Award at the 3rd Pan Pacific Connective Tissue Societies Symposium
1995	NIDR, NIH Cash Award for Innovative Research ($2500)
1990	NZDA. Award for Research, New Zealand Dental Association
1989-1993	Fulbright Travel Scholarship, NZ/US Fulbright Commission
1986	Dental Research Foundation Prize, New Zealand Dental Research Foundation
1983	J. Lee-Jones Prize in Preclinical Dentistry, University of Otago
1984	O.V. Davies Memorial Prize in Basic Dental Surgery, University of Otago
1986	Leask Memorial Medal for Clinical Dentistry, University of Otago

Invited Talks

2004 FGF7 and FGF10 signaling through FGFR2b regulates ex vivo mouse submandibular gland branching morphogenesis through MMP-dependent mechanisms. Keystone Meeting on Signaling in Vertebrate Organogenesis. Feb 26-Mar 2, 2004.

2004. FGFs and MMPs regulate branching morphogenesis of mouse submandibular glands, branch Seminar, LCCTP Lab, NCI, NIH. March 5, 2004.

2003 Branching morphogenesis is regulated by Fibroblast Growth Factor signaling and Matrix Metalloproteinases activity. Shriners Hospital for Children-Portland Research Center. Monday Seminar Series. August 18.

2003 FGF7 and FGF10 Regulate Branching Morphogenesis of Developing Mouse Submandibular Glands *in vitro* through FGFR2b and FGFR1b. International Association for Dental Research, Goteborg, Sweden. June 27.

2003 Matrix Metalloproteinase (MMP) Activity Is Required for Branching Morphogenesis of Developing Mouse Submandibular Salivary Glands. Pan Pacific Connective Tissues Symposium. Yamaguchi, Japan, June 7.

2003 Branching morphogenesis of mouse submandibular glands is regulated by Matrix Metalloproteinases and Fibroblast Growth Factor signaling. Department of Cell and Molecular Biology, Distinguished Scientist Seminar Series, Boston University Dental School. May 8.

2003 Branching morphogenesis of mouse submandibular glands is regulated by FGF signaling. Seminar, Laboratory of Cell Biology, NHBLI, NIH. April 22.

2003 FGFs regulate branching morphogenesis of embryonic submandibular glands. Seminar, Gene Therapy and Therapeutics branch , NIDCR, NIH. March 17.

2002 Branching morphogenesis of mouse salivary glands: regulation by growth factors and the basement membrane. Biological Stain Commission, Annual Meeting, June 7-8. Rockville, MD.

2002 Career Paths in Dentistry. 38th Annual Dental Students Conference on Research. March 16-19. NIDCR, NIH, Bethesda MD.

2001 Fibroblast growth factor receptors and laminin 10 are important regulators of branching morphogenesis of embryonic salivary glands. The Brazilian Society for Cell Biology, Symposium on Cytoskeleton and Cell Differentiaion. November 29-30. Sao Paulo, Brazil

2001 Invited for 2 week Mini-Sabbatical to Department of Oral Pathology, November 16-December 2, Sao Paulo, Brazil.

2001 Fibroblast growth factor receptor 2 (IIIb) regulates branching morphogenesis of developing mouse submandibular glands. International Association of Dental Research Symposium on Repair of Salivary Glands. June 27-30, Chiba, Japan.

2001 Functional Genomics and Salivary Gland Development. Student Research Group Annual Research Symposium. Baltimore College of Dental Surgery, UMD Dental School. April 18, Baltimore MD.

2001 Array Analysis of Salivary Gland Development: Where do we go from here? Gordon Conference on Salivary Glands and Saliva. February 11-16, Ventura CA.

2000 Gene expression profiles of developing mouse salivary glands. 16th International Conference on Oral Biology. Saliva in Health and Disease. April 9-12, Chantilly VA.

1999 PKC and MAP kinase signaling regulate the amylase promoter activity in a human salivary cell line. Seminar, Clinical Research Branch , NIDCR, NIH. May 24.

1999 Growth factor/matrix synergy in salivary acinar cell differentiation. Seminar, Pulmonary Critical Care Medicine Branch, NHLBI, NIH, Bethesda MD.

1999 Extracellular Matrix/Growth Factor Synergy Promotes HSG Cell Acinar Differentiation. . Gordon Conference on Salivary Glands and Saliva. February 21-26, Ventura CA

1998 Basement Membranes: Structure, function and role in development. The role of basement membrane components in salivary acinar cell differentiation in vitro. Two invited lectures on Extracellular Matrix, at the VI research Meeting of the School of Dentistry at the University of Sao Paulo, Brazil. October 26–28.

1998 Growth Factor-Matrix Synergy in Cell Differentiation. NIH Research Festival, October 7-9.

1998 The Role of Laminin and Syndecans in Salivary Gland Cell Differentiation. February 3, Dental Research Seminar, Oregon Health Sciences University Dental School, Portland, OR.

1997 Laminin-1 and laminin-2 alpha chain peptides are involved in salivary gland cell differentiation via a syndecan-1 surface receptor. December 13, Three Dimensional Tissue Culture: A new dynamic in cell biology. (Special Interest Subgroup meeting) ASCB 37th Annual meeting, Washington, DC.

1997 Laminin G-domain synthetic peptides bind to syndecans and promote acinar-like development of a human submandibular gland (HSG) cell line. September 17, RCOB Seminar, University of Pennsylvania Dental School, Philidelphia, USA

1997 Pathways to organogenesis. August 28, Terry Cutress Symposium: Interactions between epidemiology and basic research in oral health. Dunedin, New Zealand.

1997 The role of laminin in cell differentiation. August 21, Malaghan Institute Research Seminar, Wellington, New Zealand.

1997 Basement membranes in organ development. August 20, Deans Lecture, Wellington School of Medicine, Otago University, Wellington, New Zealand.

1997 The role of extracellular matrix in salivary gland acinar cell differentiation. Gordon Conference on Salivary Glands and Saliva. February 23-28, Ventura CA.

Editorial Responsibilities

2003-present Biotechnic and Histochemistry Journal

2004 Developmental Dynamics

Supervisory Experience

Pre-doctoral Intramural Training Award Student

2003-04 Colin Lathrop
2002- 03 Christopher Myers
2001- 03 Zachary Steinberg
2001-02 Benjamin Kidder
2000-01 Saba Lakhani
1999-00 John Vargas
1997-99 Dale Jung
1996-97 Sharon Lee

NIH Summer Students

2003	Adam Orgel
2001	V. Matthew Heim
2000	Susan Ho
1999	Zachary Steinberg
1996-98	Teresa McMillan
1996	Eric Gherman
1995	Rebekka Savage

Special Volunteers

1996-97	Dr. John Basile

High School Students

1995	Robyn Kessel

Bibliography

2004 Laminin α5 regulates dental epithelium phenotypes and is essential for the growth and shape of the tooth. S. Fukumoto, J.H. Miner, H. Ida, H. Miyazaki, **M.P. Hoffman**, Y. Yamada. (Submitted)

2004 FGFR2b signaling regulates submandibular gland branching morphogenesis: Identification of MMP-dependant mechanisms by which FGF7 and FGF10 promote epithelial morphogenesis. Z. Steinberg, C. Myers, V. M. Heim, B. L. Kidder, M. Larsen and **M. P. Hoffman.** (Submitted).

2004 Freitas VM, Scheremeta B, **Hoffman MP**, Jaeger RG. Laminin-1 and SIKVAV a laminin-1-derived peptide, regulate the morphology and protease activity of a human salivary gland adenoid cystic carcinoma cell line. Oral Oncol. 2004 May;40(5):483-9.

2003 Role of the Extracellular Matrix in Morphogenesis H.K. Kleinman, D. Philp, and **M. P. Hoffman**. *Current Opinions in Biotechnology*. (14(5):526-32)

2003 N. Suzuki, N. Ichikawa, S. Kasai, M. Yamada, N. Nishi, H. Morioka, H. Yamashita, Y. Kitagawa, **M. P. Hoffman**, and M. Nomizu. Syndecan binding sites on the laminin a1 chain G domain. *Biochemistry* (42(43):12625-33).

2003 NOVH increases MMP3 expression and cell migration in glioblastoma cells via a PDGFR-α dependent mechanism. L. M., Martinerie, C, Thibout, **M. P. Hoffman**, F, Verrechia, Y, Le Bouc, A, Mauviel, H.K. Kleinman. *FASEB* (17(13):1919-21)

2003 Role of PI 3-kinase and PIP3 in Submandibular Gland Branching Morphogenesis. M. Larsen, **M. P. Hoffman**, T. Sakai, J. C. Neibaur, J. M. Mitchell, and K. M. Yamada. *Devlopemental Biology* 255:178-191.

2002 **M. P. Hoffman**, B.L. Kidder, S. Lakhani, Z. Steinberg, S. Ho, H. K. Kleinman and M. Larsen. Gene expression profiles of mouse salivary gland development: FGFR1 regulates branching morphogenesis in vitro through BMP- and FGF-dependant mechanisms. *Development*: 129 (5767-5778)

2002 D. Hecht, D. Jung, V. V. Prabhu, P.J. Munson, **M. P. Hoffman**, H. K. Kleinman. Metallothionein promotes laminin-1-induced acinar differentiation in vitro and reduces tumor growth in vivo. *Cancer Research*, 62, (18) 5370-4.

2002 J. A. Engbring, **M. P. Hoffman**, A. J. Karmand, M. Nomizu, and H. K. Kleinman. The B16F10 cell surface receptor for a metastasis-promoting site on laminin-1 is a heparan sulfate/chondroitin sulfate containing proteoglycan. *Cancer Research* 62, 3549-3554

2001 **M. P. Hoffman**, J. A. Engbring, P. K. Nielsen, J. Vargas, Z. Steinberg, A. J. Karmand, M. Nomizu, Y. Yamada, and H. K. Kleinman. Cell type-specific differences in glycosaminoglycans modulate the biological activity of a heparin-binding peptide (RKRLQVQLSIRT) from the G domain of the laminin α1 chain. *Journal of Biological Chemistry* 276 (25): 22077-22085

2000 D. W. Jung, D. Hecht, S. W. Ho, B.C.O'Connell, H.K. Kleinman and **M. P. Hoffman**. PKC and MAP kinase signaling pathways regulate the amylase promoter activity in a human salivary cell line. *Journal of.Cellular Physiology*. 185: 215-225.

2000 M. Nomizu, Y. Kuratomi, L.M.Ponce, S-Y. Song, K. Miyoshi , A. Otaka, S.K. Powell, **M. P. Hoffman**, H.K. Kleinman and Y. Yamada. Cell adhesive sequences in mouse laminin β1 chain. *Arch. Biochem. Biophys*. 378 (2) 311-320.

2000 P.K. Nielsen, Y.S. Gho, **M. P. Hoffman**, H. Watanabe, M. Makino, M. Nomizu, Y. Yamada. Identification of a major heparin and cell binding site in the G4 module of the laminin α5 chain. *Journal of Biological Chemistry*. 275 (19) 14517-14523.

1999 L.M.Ponce, M. Nomizu, M. C. Delgado, Y. Kuratomi, **M. P. Hoffman**, S.K. Powell, Y. Yamada, H. K. Kleinman and. K.M. Malinda Identification of endothelial cell binding sies on mouse laminin γ1 chain. *Circulation. Research*. 84; 688-694.

1998 M. Nomizu, Y. Kuratomi, K.M. Malinda,S-Y. Song, K. Miyoshi , A. Otaka, S.K. Powell, **M. P. Hoffman**, H.K. Kleinman and Y. Yamada. Cell binding sequences in mouse laminin α1 chain. *Journal of Biological Chemistry*. 273 (46) 32491-32499.

1998 **M. P. Hoffman**, M. Nomizu, E.Roque, S. Lee, D. Jung, Y. Yamada and H.K. Kleinman. Laminin-1 and laminin-2 G domain synthetic peptides bind syndecan-1 and are important for acinar formation of a human submandibular gland (HSG) cell line. *Journal of Biological Chemistry*. 273 (44) 28633-28641

1998 C-Y. Zheng, **M. P. Hoffman**, T.S. McMillan, H.K. Kleinman and B.C. O'Connell. Amylase and kallikrein promoter activities are indicators of salivary gland cell differentiation in vitro. *Journal of Cellular Physiology*. 177: 628-635

1998 **M. P. Hoffman**. Pathways to organogenesis: from coconut crazed teeth in Tonga to salivary glands in space *New Zealand Dental Journal.* Sep; 94 (417) 117-8

1997 M. Nomizu, Y. Kuratomi, S-Y. Song, M.L. Ponce, **M. P. Hoffman**, S.K. Powell, K. Miyoshi, A. Otaka, H.K. Kleinman and Y. Yamada. Identification of cell binding sequences in mouse laminin g1 chain by systematic peptide screening. *Journal of Biological Chemistry*. 272 (51):32198-32205.

1997 M.M. Webber, D. Bello, H.K. Kleinman and **M. P. Hoffman**. Acinar differentiation by non-malignant immortalized human prostatic epithelial cells and its loss by malignant cells. *Carcinogenesis*. 18: 1225-1231.

1996 **M. P. Hoffman**, M.C. Kibby, J.J. Letterio and H.K. Kleinman. Role of laminin-1 and TGF-ß3 in acinar differentiation of a human submandibular gland cell line (HSG). *Journal of Cell Science*. 109: 2013-2021.

1994 **M. P. Hoffman** and C.G. Haidaris. Identification and characterization of a Candida albicans binding proteoglycan from rat submandibular salivary glands. *Infection and Immunity*. 62:828-36

1993 **M. P. Hoffman** and C.G. Haidaris. Analysis of Candida albicans Adhesion to Salivary Mucin. *Infection and Immunity*. 61: 1940-1949.

1992 A. Vasilas, L. Molina, **M. P. Hoffman** and C.G. Haidaris. The influence of morphological variation on Candida albicans adhesion to denture acrylic in vitro. *Archives of Oral Biology*. 37: 613-622.

1991 C.H. Sissons, T.W. Cutress, **M. P. Hoffman** and J.St.J. Wakefield. A multi-station dental plaque microcosm (Artificial mouth) for the study of plaque growth, metabolism, pH, and mineralization. *Journal of Dental Research.*70 (11) 1409-1416.

1989 **M. P. Hoffman**, T.W. Cutress and M.C. Crooks. Some epidemiological and scanning electron microscopic features of crazing of the dental enamel of Polynesians. *New Zealand Dental Journal*. 85: 86-90.

1988 **M. P. Hoffman**, T.W. Cutress, and S. Tomiki. Prevalence of developmental defects of enamel in children in the Kingdom of Tonga. *New Zealand Dental Journal*. 84: 7-10.